Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-514
JANUARY 27, 2003

Operations and Services
Public Weather Services, NWSPD 10-5

NATIONAL WINTER WEATHER PRODUCTS SPECIFICATION

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/.

OPR: OS22 (M. Tew) **Certified by:** OS22 (J. Lee)
Type of Issuance: Emergency.

SUMMARY OF REVISIONS: This instruction supercedes NWSI 10-514, "National Winter Weather Products Specification," dated October 1, 2002.

signed 01/13/03

Gregory A. Mandt Date
Director, Office of Climate,
Water, and Weather Services

National Winter Weather Products Specification

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1. **Introduction**. This procedural directive describes the winter weather products issued by the Hydrometeorological Prediction Center (HPC) for the contigous United States (CONUS), guidelines associated with these products, detailed content and format for each product type.

2. **Heavy Snow and Icing Discussion (product category QPFHSD)**.

2.1 Mission Connection. HPC issues a heavy snow and icing discussion that provides the meteorological reasoning for the 12-hr and 24-hr day 2 probabilistic heavy snow and icing guidance graphic. This text message is used by NWS field offices and the general meteorological community (private sector and the media) including the aviation community. The product also supports the CONUS NWS public and aviation weather programs.

2.2 Issuance Guidelines.

2.2.1 Creation Software. HPC uses a Word Perfect text editor to issue the QPFHSD.

2.2.2 Issuance Criteria. The QPFHSD is a routine, schedule-driven product.

2.2.3 Issuance Time. See Table 1 below.

2.2.4 Valid Time. See Table 1 below.

2.2.5 Product Expiration Time. Product expires after valid time.

HPC Probabilistic Heavy Snow and Icing Discussion				
Issuance Time (UTC)	***Valid Time (UTC)***	***AWIPS ID***	***WMO Header***	***Product Description***
300	0600 -1800 1800 - 0600	QPFHSD	FOUS11 KWBC	Text providing meteorological reasoning for 12-hour probabilities of hvy snow and icing graphic
745	1200 -0000 0000 -1200 1200 -1200 Day 2	QPFHSD	FOUS11 KWBC	Text providing meteorological reasoning for 12-hour and day 2 probabilities of hvy snow and icing graphic
1500	0600 - 1800 1800 - 0600	QPFHSD	FOUS11 KWBC	Text providing meteorological reasoning for 12-hour probabilities of hvy snow and icing graphic
1415	0000 - 1200 1200 - 0000 0000 -0000 Day 2	QPFHSD	FOUS11 KWBC	Text providing meteorological reasoning for 12-hour and day 2 probabilities of hvy snow and icing graphic

Table 1. Product schedule and valid times for heavy snow and icing discussion.

2.3 Technical Description. The HSD follows the format and content described in this section.

2.3.1 Universal Geographic Code Type. Not applicable.

2.3.2 Mass News Disseminator Broadcast Instruction Line. Not applicable.

2.3.3 Mass News Disseminator Product Type Line. The QPFHSD header is Probabilistic Heavy Snow and Icing Discussion.

2.3.4 Content. HPC issues a heavy snow and icing discussion that provides the meteorological reasoning for the 12-hr and 24-hr day 2 probabilistic heavy snow and icing guidance graphic.

2.3.5 Format.

FOUS11 KWBC ddhhmm
QPFHSD

PROBABILISTIC HEAVY SNOW AND ICING DISCUSSION
NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION
NWS HYDROMETEOROLOGICAL PREDICTION CENTER CAMP SPRINGS MD
200 AM EST THU JAN 31 2002

12HR HEAVY SNOW AND ICING VT JAN 31/1200 UTC THRU FEB 1/0000 UTC
REFERENCE AWIPS GRAPHICS UNDER...HEAVY SNOW FCST

AS THE UPPER TROF OVER THE SRN ROCKIES SHIFTS OUT INTO THE CNTRL AND SRN PLNS.... THE PERSISTENT SWLY LOW LEVEL FLOW WILL CONTINUE TO BRING ABUNDANT GULF MSTR NWD THRU THE MID-MS VLY PRODUCING MORE MDT TO HVY WARM ADVECTION PCPN OVER MUCH OF THE OH VLY AND LWR GT LKS. THERE IS STILL ENOUGH LOW LEVEL ARCTIC AIR IN PLACE OVER MUCH OF THE REGION TO PRODUCE SGFNT ICING WITH A HIGH RISK FROM NEAR THE SRN END OF LAKE MI EWD THRU THE BUF AREA. HPC QPF AMOUNTS ARE SUCH THAT UPWARDS OF A HALF AN INCH OF ICE ARE EASILY POSSIBLE.

TO THE NORTH THERE IS A LOW TO MDT RISK OF SNOW POSSIBLE WHERE MID-LVL TEMPS ARE LOW ENOUGH. HOWEVER... LIQUID EQUIVALENT AMOUNTS ARE NOT ALL THAT HEAVY... SO WILL LIMIT THE HIGH RISK AREA TO THE EAST FROM NEAR BUF TO HTO WHERE UPSLOPE EFFECTS OVER THE MTNS WILL FURTHER ENHANCE LIFT.

12HR HEAVY SNOW AND ICING FCST VT FEB 1/0000 UTC THRU FEB 1/1200 UTC
REFERENCE AWIPS GRAPHICS UNDER...HEAVY SNOW FCST

PRETTY MUCH THE SAME STORY AS IN THE ABOVE PERIOD WITH THE WHOLE MESS SHIFTED TO THE NORTH AND EAST. WHILE THERE IS STILL A HIGH RISK OF ICING WITH AGAIN A HALF AN INCH POSSIBLE.... THE AREAL EXTENT IS BEGINNING TO SHRINK SOMEWHAT WITH THE SNOW AREA NOW BEGINNING TO EXPAND AS THE STRONG LOW LEVEL FLOW BEGINS TO SCOUR OUT SOME OF THE LOW LEVEL ARCTIC AIR. THUS HAVE THE HI ICE AREA FROM NEAR BUF AGAIN EWD TO NEAR DDH.

HEAVIEST SNOW IS EXPECTED JUST TO THE NORTH OF THE TRACK OF THE SFC LOW AS IT MOVES INTO SERN UPSTATE NY BY THE END OF THE PERIOD WITH A HIGH RISK OF GRTR THAN 4 INCHES OF SNOW OVER CNTRL NH AND XTRM SRN

MAINE. CONSIDERING THE PLENTIFUL MSTR AND STRONG VERTICAL VELOCITIES...WOULD EXPECT TO SEE MAX TOTALS OF 6 TO 8 INCHES.

DAY2 HEAVY SNOW AND ICING FCST VT FEB 1/1200 UTC THRU FEB 2/1200 UTC REFERENCE AWIPS GRAPHICS UNDER...HEAVY SNOW FCST

AS THE SFC LOW MOVES FROM SRN NEW ENGLAND OUT OFF THE SHORE AND UP TWDS THE CANADIAN MARITIMES... THERE WILL STILL BE A LOW TO MDT RISK OF SGFNT ICING OVER MUCH OF NEW ENGLAND WITH THE HEAVIEST ACRS NRN VT...NRN NH.. AND SWRN MAINE WHERE THERE SHOULD STILL BE ENOUGH LOW LEVEL COLD AIR IN PLACE TO SUPPORT ICING.

HVY SNOW WILL ALSO PERSIST OVER MOST OF MAINE AS MSTR WRAPS BACK INTO THE COLD AIR OVER THE NE WITH A HIGH RISK OF GRTR THAN 6 INCHES OVER PORTIONS OF NWRN MAINE.

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ROBSON/FORECAST OPERATIONS BRANCH

GRAPHICS AVAILABLE ON THE WEB AT http://www.hpc.ncep.noaa.gov/

2.4 Updates, Amendments, and Corrections. Products are not updated or amended. Corrections are issued as necessary.

3. **Probabilistic Heavy Snow and Icing Forecasts (product categories 93S, 94S, 98S)**.

3.1 Mission Connection. HPC issues probabilistic heavy snow and icing guidance products to support the NWS winter weather watch/warning program. These products are issued in probabilistic form to better represent the forecast uncertainty associated with a particular event. The products also support the CONUS NWS public and aviation weather programs.

3.2 Issuance Guidelines.

3.2.1 Creation Software. HPC uses the National Centers N-AWIPS software to generate these products.

3.2.2 Issuance Criteria. These are routine, schedule-driven products.

3.2.3 Issuance Time. Refer to Table 2.

3.2.4 Valid Time. Refer to Table 2.

HPC Probabilistic Heavy Snow and Icing Graphical Guidance Product Schedule

Issuance Time (UTC)	*Valid Time (UTC)*	*AWIPS ID*	*WMO Header*	*Product Description*
0215	0600 -1800 1800 - 0600	RBG93S RBG94S	PSID41 KWBC PSID88 KWNH	12-hour probabilities of hvy snow and icing exceeding predetermined thresholds

0715	1200 -0000 0000 -1200	RBG93S RBG94S	PSID41 KWBC PSID88 KWNH	12-hour probabilities of hvy snow and icing exceeding predetermined thresholds
0700	1200 -1200 Day 2	RBG98S	PGII98 KWNH	24-hour probabilities of hvy snow and icing exceeding predetermined thresholds
1415	1800 - 0600 0600 - 1800	RBG93S RBG94S	PSID41 KWBC PSID88 KWNH	12-hour probabilities of hvy snow and icing exceeding predetermined thresholds
1815	0000 -1200 1200 - 0000	RBG93S RBG94S	PSID41 KWBC PSID88 KWNH	12-hour probabilities of hvy snow and icing exceeding predetermined thresholds
1900	0000 -0000 Day 2	RBG98S	PGII98 KWNH	24-hour probabilities of hvy snow and icing exceeding predetermined thresholds

Table 2. Probabilistic Heavy Snow and Icing Chart Issuance and Valid Times

3.2.5 Product Expiration Time. Product expires after valid time.

3.3 Technical Description. Charts should follow the format and content described in this section.

3.3.1 Universal Geographic Code Type. Not applicable.

3.3.2 MND Broadcast Line. Not applicable.

3.3.3 MND Header. Not applicable.

3.3.4 Content. A graphical product that depicts the probabilities of snow (solid lines) and /or ice (dashed lines) exceeding predetermined threshold values that vary depending on location within the CONUS.

a. The SOLID LINES indicate the forecaster confidence (low, moderate and high) that a location within the area to the right of the arrow will receive greater than or equal to a determined threshold of snowfall, based on the region:

Sector Threshold Regions	**12-hr forecast** (inches)	**Day 2 Forecast** (inches)
Western Region	12	18
Standard	4	6
Southeast	2	4

Table 3. Sector Snow Thresholds.

b. The DASHED LINES indicate the forecaster confidence (low, moderate and high) that a location within the area to the right of the arrow will receive greater than or equal to one quarter-inch (0.25") of ice accumulation.

c. The forecaster confidence thresholds are:

(1) LOW - 20% to 30% chance of occurrence
(2) MODERATE (MDT) - 30% to 70% chance of occurrence
(3) HIGH - 70% or greater chance of occurrence

3.3.5 Format Examples. Examples of 93S, 94S, 98S respectively.

3.3.5.1 93S Example.

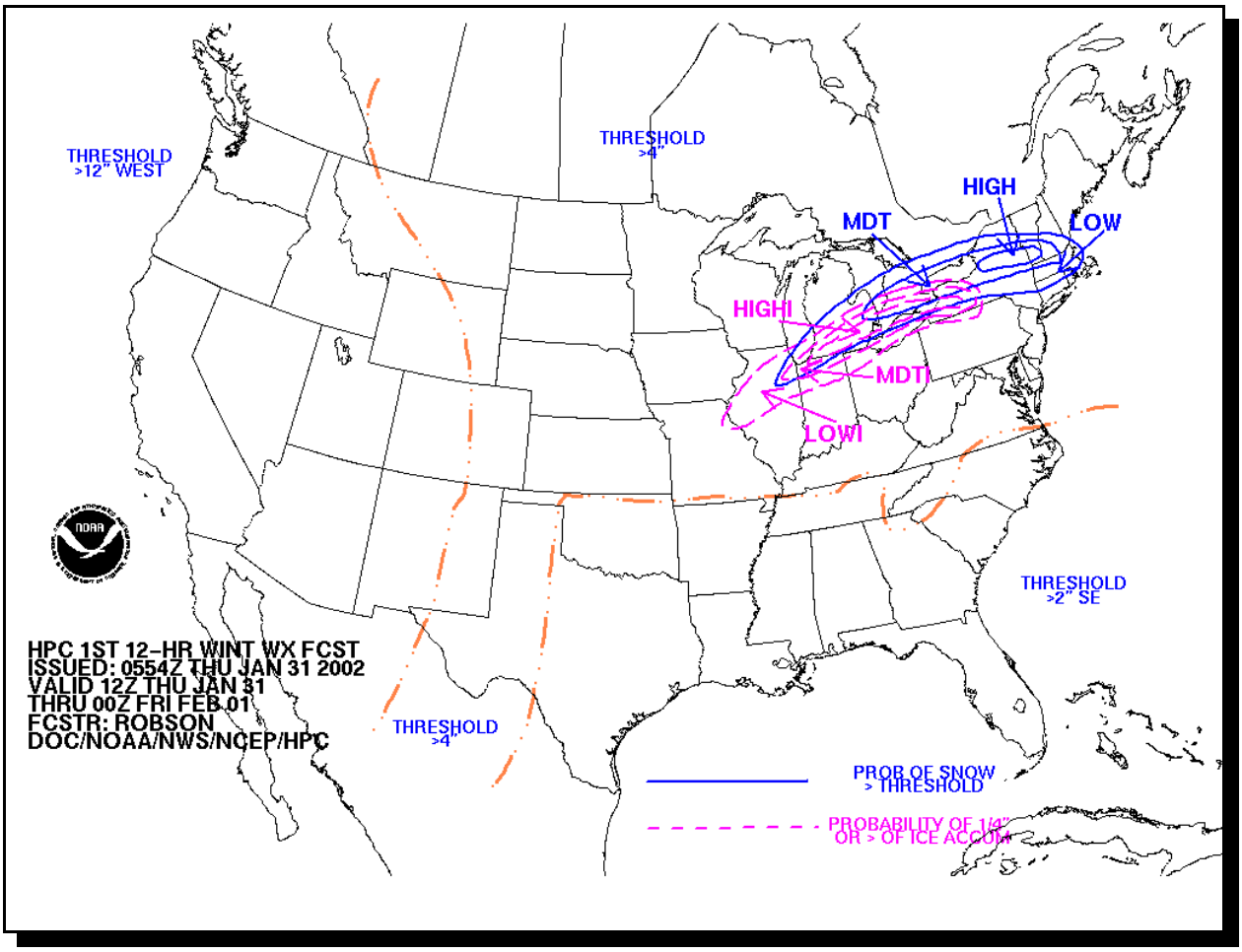

Figure 1. 93S - Graphical 12-hr Probabilistic Heavy Snow and Icing Product.

3.3.5.2 94S Example.

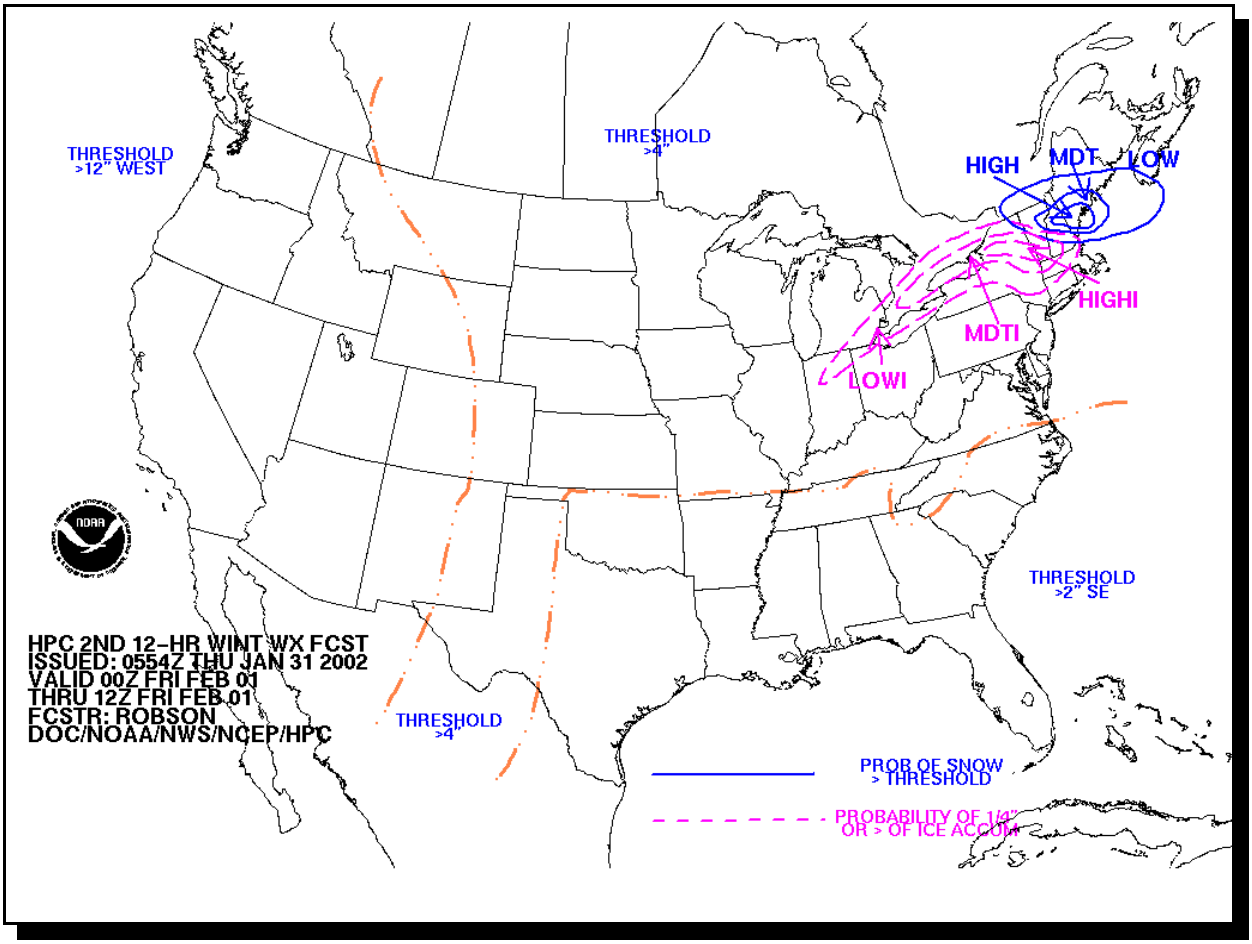

Figure 2. 94S - Graphical 24-hr Probabilistic Heavy Snow and Icing Product.

3.3.5.3 98S Example.

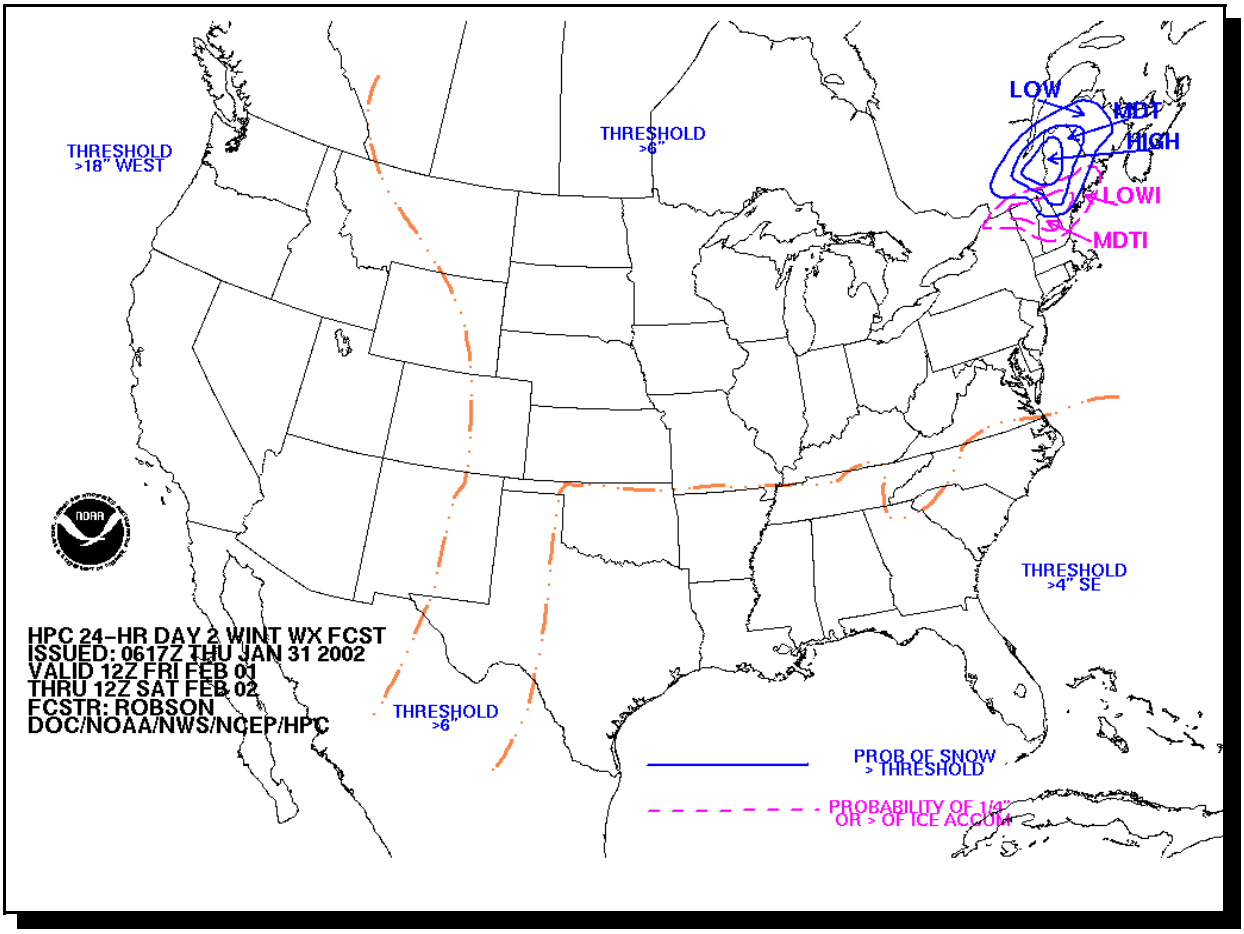

Figure 3. 98S - Graphical day 2 Probabilistic Heavy Snow and Icing Product.

3.4 Updates, Amendments, and Corrections. HPC will correct for format and grammatical errors as required.